CVS-17 Follow up of the Hong Kong Cardiovascular Risk Factor Prevalence Survey cohort

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Introduction: In 1995-6, 2881 randomly chosen Hong Kong men and women participated in the Hong Kong Cardiovascular Risk Factor Prevalence Survey. The subjects are recalled for follow up after 6 years. Here, we report changes in risk factors in the subjects who have been restudied.
Method: Subjects were randomly chosen from the cohort and were studied in the morning after overnight fasting. Height, weight, waist and hip circumferences were measured. Blood pressure was measured carefully after resting. Venous blood was taken for analysis of lipids and glucose.
Results: 179 subjects (89 M, 90 F; age 51±13 yrs) were studied. The blood pressure was 117.2±1.9/74.0±1.1 mmHg in 1995-6 and 120.3±1.3/75.0±0.8 mmHg in 2001-2. The systolic and diastolic blood pressure both increased by 3.1±2.3 and 1.0±1.3 mmHg respectively ($p>0.05$). In men, the increase in blood pressure was 0.1±2.1/1.4±1.5 mm Hg whereas in women, the increase was 4.6±1.7/2.6±1.3 mmHg. There was a significant increase in systolic blood pressure in women ($p=0.01$). There were no significant changes in body weight and body mass index (BMI), but the waist circumference increased from 81.8±1.1 to 84.3±1.2 cm ($p<0.001$). Plasma cholesterol increased from 5.04±0.11 mmol/L to 5.28±0.10 mmol/L ($p=0.002$).
Conclusions: There was an increase in waist circumference, which was accompanied by an increase in plasma cholesterol. There was an increase in systolic blood pressure in women with age. These changes may reflect the development of the metabolic syndrome in some of the individuals.

CVS-18 Cellular electrophysiology in swine atrial myocytes

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Introduction: Pig is a species commonly used for the studies on cardiac diseases including arrhythmias, but the cellular electrophysiology is not fully understood in pig atrium. The present study was to examine ionic contribution to action potential repolarization in pig atrial myocytes.
Method: Single atrial myocytes were enzymatically dissociated from pig left atrium. Transmembrane currents were recorded with whole-cell patch clamp technique at 22~23°C.
Results: Classical 4-aminopyrine- (4-AP) sensitive transient outward K^+ current (I_{to}) was not detected with voltage-steps to between –40 and –60 mV from –50 mV in pig atrial myocytes. Instead, Ca^{2+}-activated transient outward Cl^- current ($I_{Cl.Ca}$ or I_{to2}) was observed in all cells tested (n = 25). I_{to2} showed a bell-shaped *I-V* relationship, and sensitive to inhibition by the Cl^- channel blocker DIDS (100 μM), and replacement of external Cl^- ion. In addition, a sustained delayed rectifier K^+ current (I_{Ksus}) was observed in pig atrial myocytes. Current-voltage (*I-V*) relationship of I_{Ksus} showed a property of weak inward rectification. The current density was 4.8 ± 0.7 pA/pF at +50 mV (n = 9), and was highly sensitive to inhibition by 4-AP with IC_{50} of 17.5 μM (n = 6). I_{Ksus} was not affected by 10 mM tetraethylammonium or 0.5 mM Ba^{2+}. However, the current showed a strong use-dependence at 1 (-60%) and 2 (-80%) Hz.
Conclusion: 1) The classical I_{to} observed in hearts of several species including man is not expressed in pig atrial myocytes; 2) I_{to2} is significant in pig atrial cells; 3) 4-AP-sensitive I_{Ksus}, similar to ultra-rapid delayed rectifier K^+ in human atrium, is present in pig atrial myocytes, but the current is highly suppressed at normal heart rates; therefore, 4) I_{to2} may play an important role in the repolarization of pig atrium, which is different from human.